

# Treasure Valley Future Water Demand Study

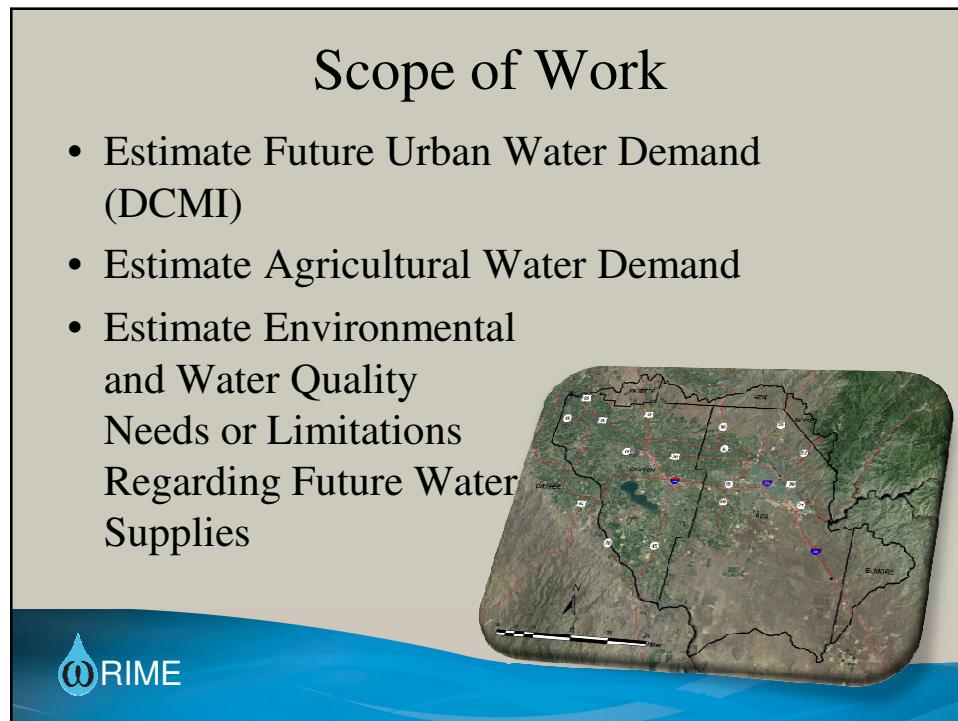
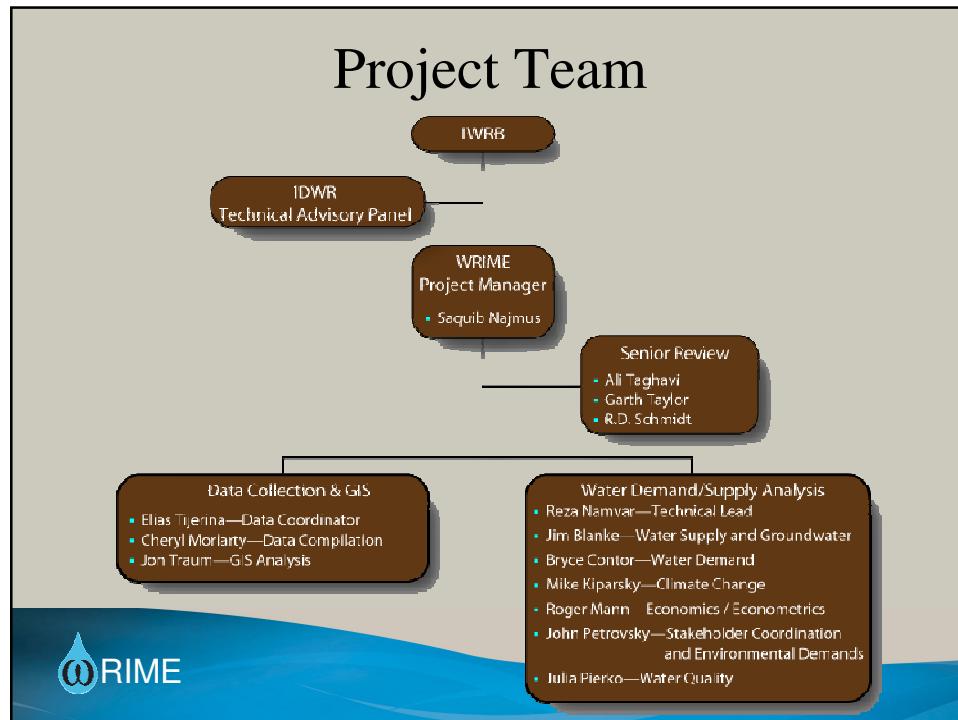
Treasure Valley  
CAMP Advisory Committee Meeting  
April 28, 2010



## Presentation Summary

- Project Background
- Approach for estimating future water demand
- Preliminary DCMI and Agricultural water demand estimates





## Urban Water Demand (DCMI)

- Population
  - Historic Population and Forecast (Census)
  - 2030 Demographic Projection (COMPASS)
  - 2035 Draft Projection (COMPASS)
- Water Use
  - 2001 DCMI Water Demand, Water Rights, Water Purveyor Records, USGS water data



## Population Forecast

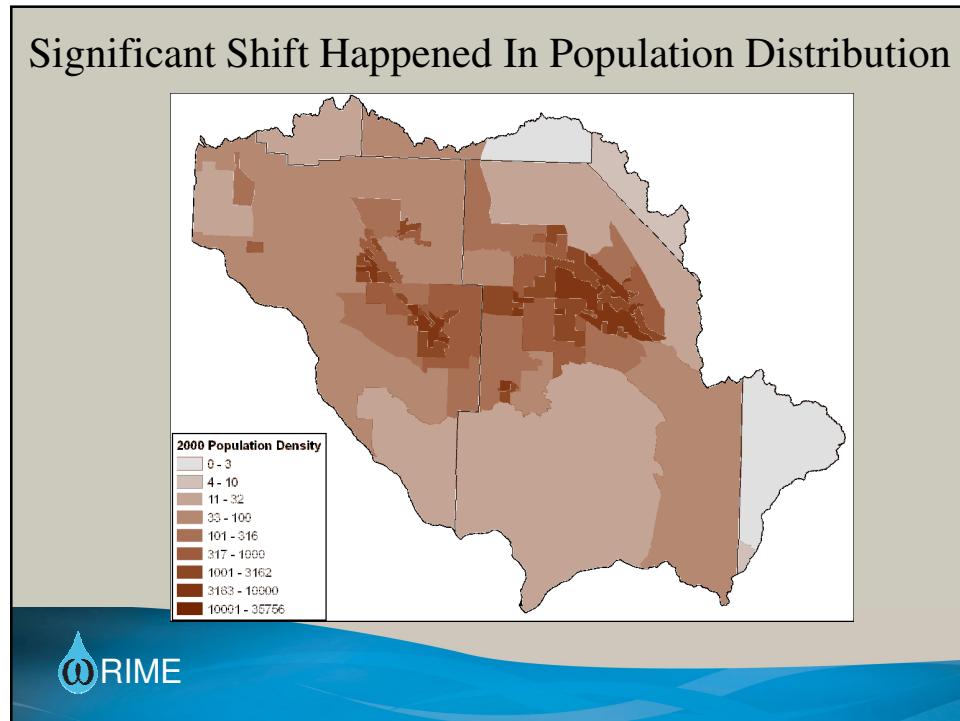
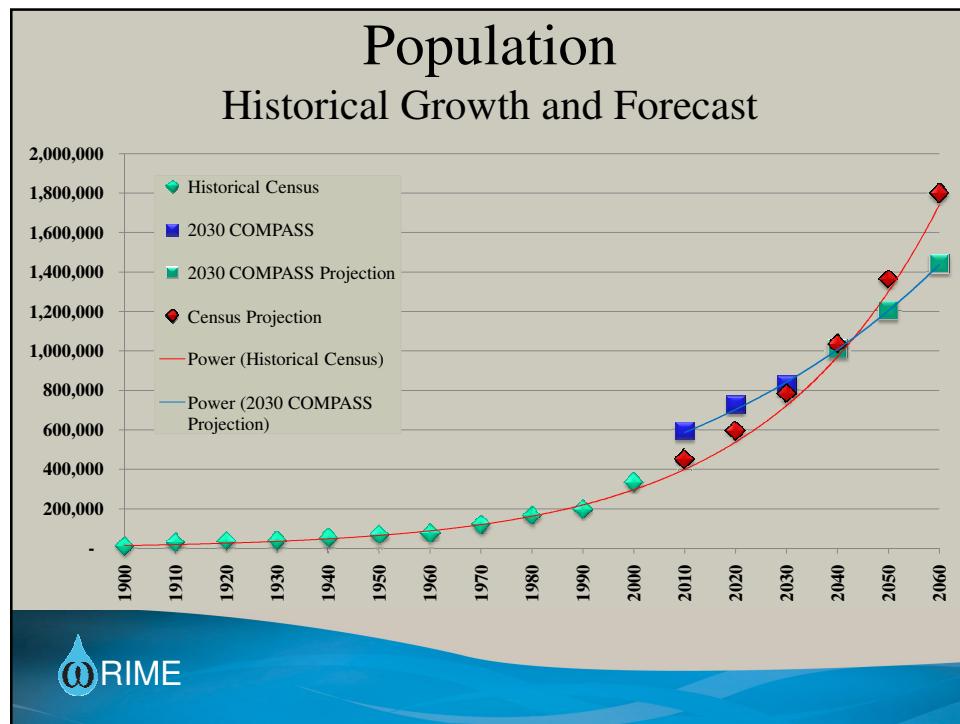
• In the previous 100 years, Ada and Canyon Counties' population increased from 8,015 to 331,842

• Population may triple from 2010 to 2060

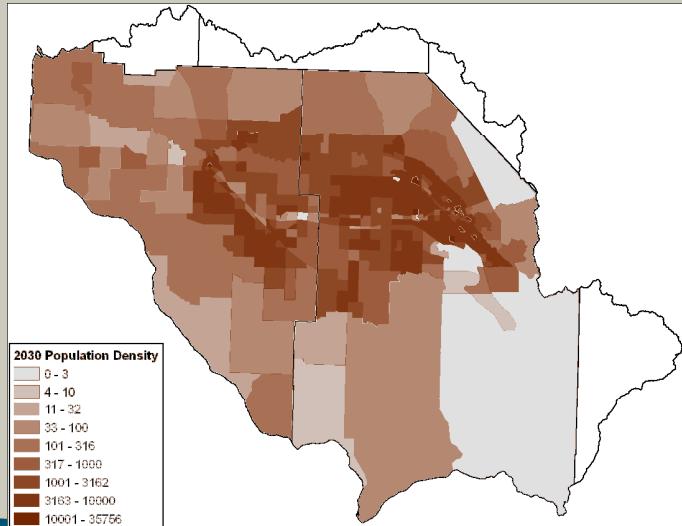
	Census Data	2030 COMPASS (1)	Population forecast, 2.8% (2)
1900	8,015		
1910	26,364		
1920	36,494		
1930	37,288		
1940	48,794		
1950	65,819		
1960	71,441		
1970	117,141		
1980	162,466		
1990	195,347		
2000	331,842		
2010		593,010	451,117
2020		726,981	594,593
2030		825,000	783,703
2040		1,007,493*	1,032,957
2050		1,204,185*	1,361,487
2060		1,438,029*	1,794,505

1. 2030 COMPASS data was projected from 2030 to 2060.
2. Population projection at annual average growth rate of 2.8% observed from 1950 to 2000.

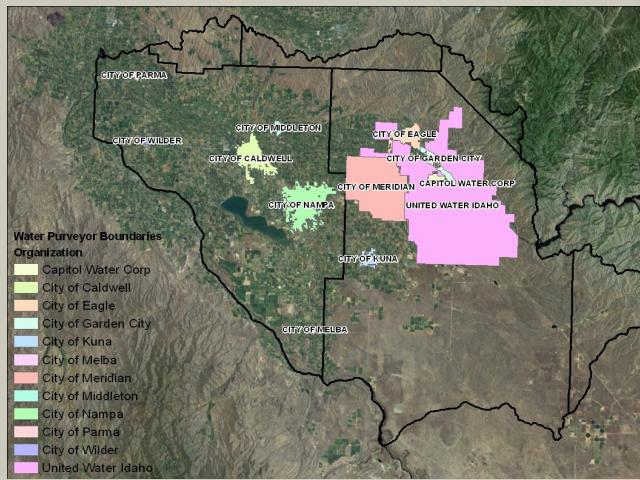




## Significant Shift Happened In Population Distribution



## Current Water Use Public Water Purveyor Boundary



## Historical Water Use Increased by 28% in 7 years

Average Annual (Million Gallons)

	ADA COUNTY					CANYON COUNTY				Total
	Boise	Meridian	Kuna	Other	Total	Nampa	Caldwell	Other	Total	
1999	14,548	2,226			16,774		1,684	<b>126</b>	1,810	18,584
2000	16,920	2,699	1,184	<b>3,048</b>	23,851	<b>11,411</b>	1,695	<b>659</b>	13,765	<b>37,616</b>
2001	16,856	2,692	1,414	<b>3,048</b>	24,010	<b>12,429</b>	1,775	<b>662</b>	14,866	38,876
2002	16,759	2,891	1,644	<b>3,048</b>	24,342	<b>13,446</b>	1,743	<b>681</b>	15,871	40,213
2003	16,632	2,880	1,874	<b>3,174</b>	24,560	<b>14,464</b>	1,734	<b>679</b>	16,877	41,437
2004	16,471	2,952	2,104	<b>3,198</b>	24,725	<b>15,482</b>	1,682	<b>685</b>	17,848	42,573
2005	15,705	3,025	2,334	<b>3,149</b>	24,212	<b>16,500</b>	1,687	<b>693</b>	18,880	43,092
2006	16,680	3,375	2,564	<b>3,269</b>	25,886	<b>17,518</b>	1,784	<b>716</b>	20,018	45,905
2007	17,291	3,683	2,794	<b>3,316</b>	27,084	<b>18,536</b>	1,865	<b>724</b>	21,125	<b>48,209</b>
2008	16,229	3,498	3,024	<b>3,239</b>	25,990	<b>19,554</b>	1,783	<b>736</b>	22,073	48,063
2009	14,299	3,418	3,254	<b>3,249</b>	24,221	<b>20,571</b>	1,795	<b>724</b>	23,091	47,311

\*Annual water use data, when available, was provided by the city, private water company, or PUC. Production data not received was estimated based on service area population and a water use per capita of 220 gpcd (in bold).

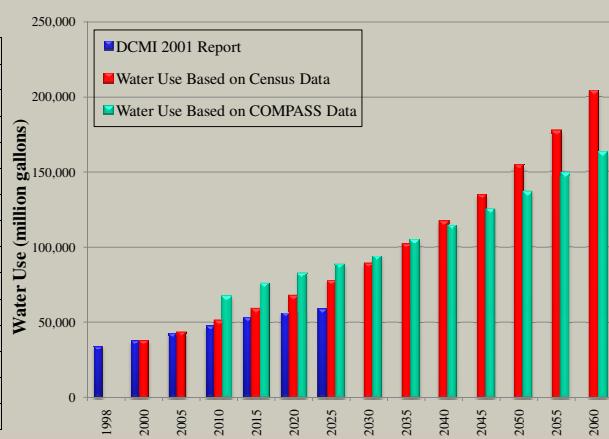
\*\*1 Million Gallons = 3.0689 Acre-Feet



## Estimated Water Demand

Average Annual (Million Gallon)

	DCMI	Census	Compass
1998	33,642		
2000	37,622	37,616	
2005	42,127	43,092	
2010	47,557	51,136	67,220
2015	53,105	58,707	75,369
2020	56,061	67,400	82,406
2025	58,470	77,379	88,155
2030		88,836	93,517
2035		101,989	104,427
2040		117,090	114,204
2045		134,427	124,868
2050		154,330	136,499
2055		177,181	149,181
2060		203,415	163,006

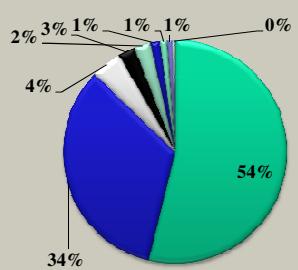


## Agricultural Water Demand

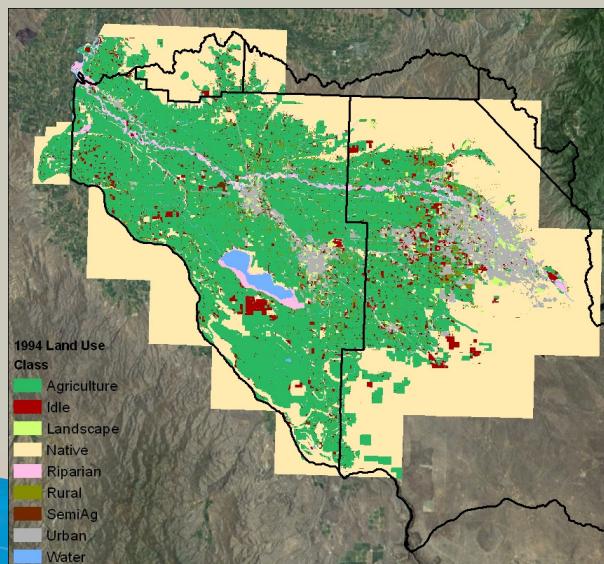
- Computed using Integrated Water Flow Model Demand Calculator (IDC Model)
- Data Element
  - Land use distribution
  - Crop Acreage
  - Hydrologic data
  - Irrigation efficiency/practices
  - Groundwater/Surface water deliveries

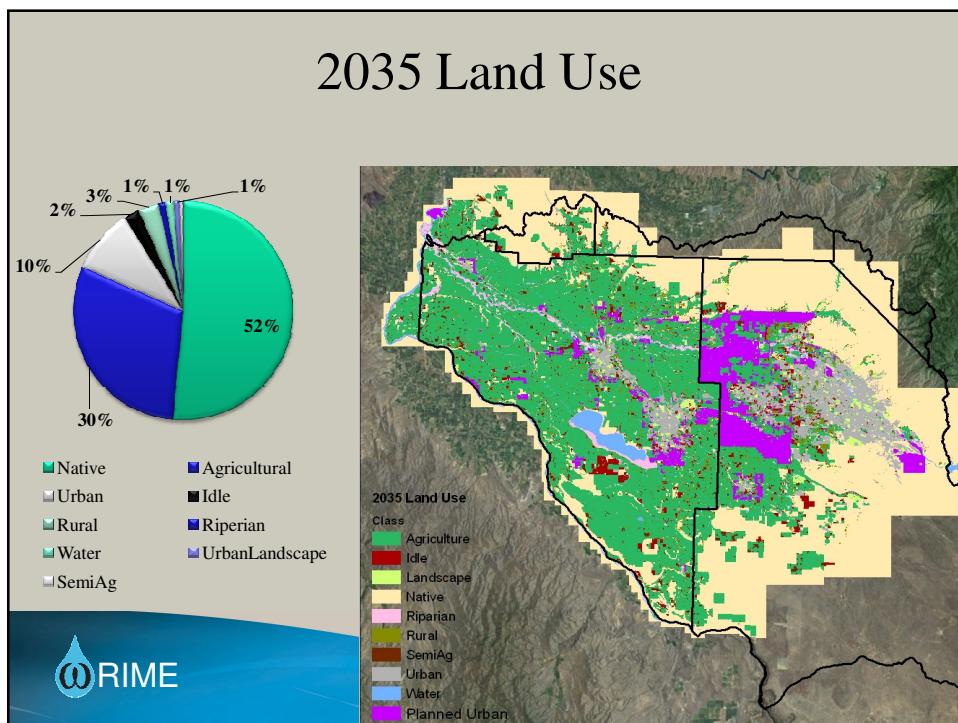
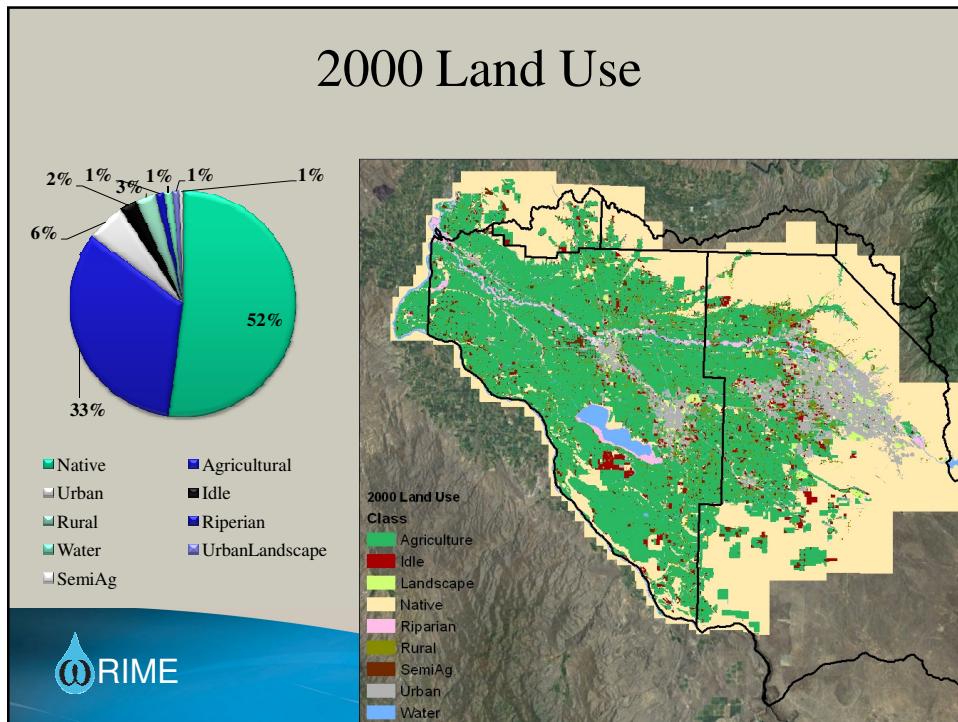


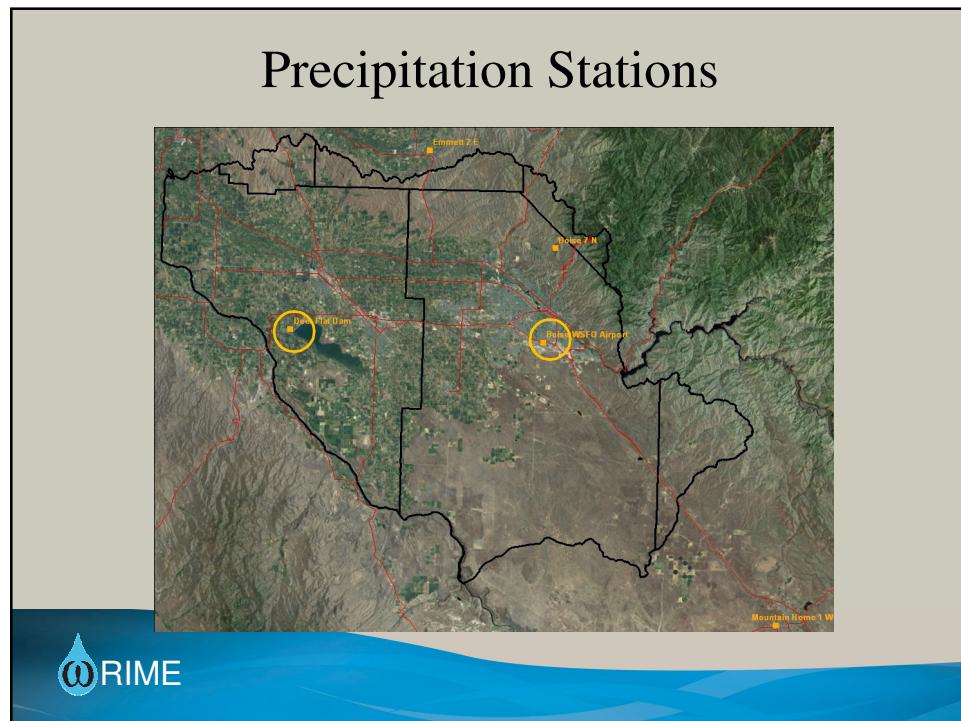
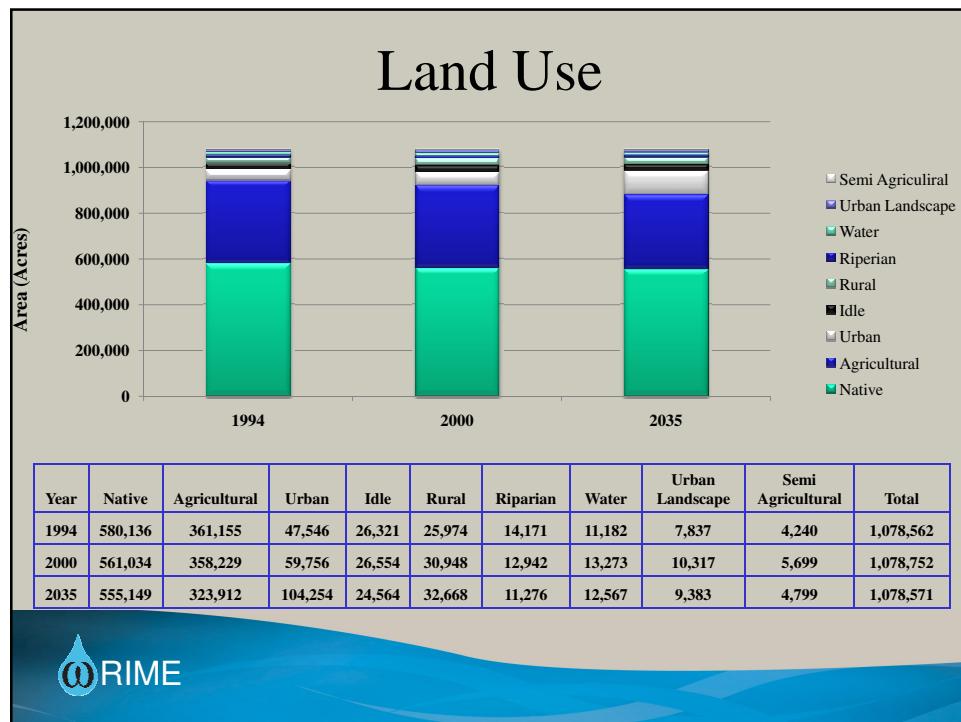
## 1994 Land Use

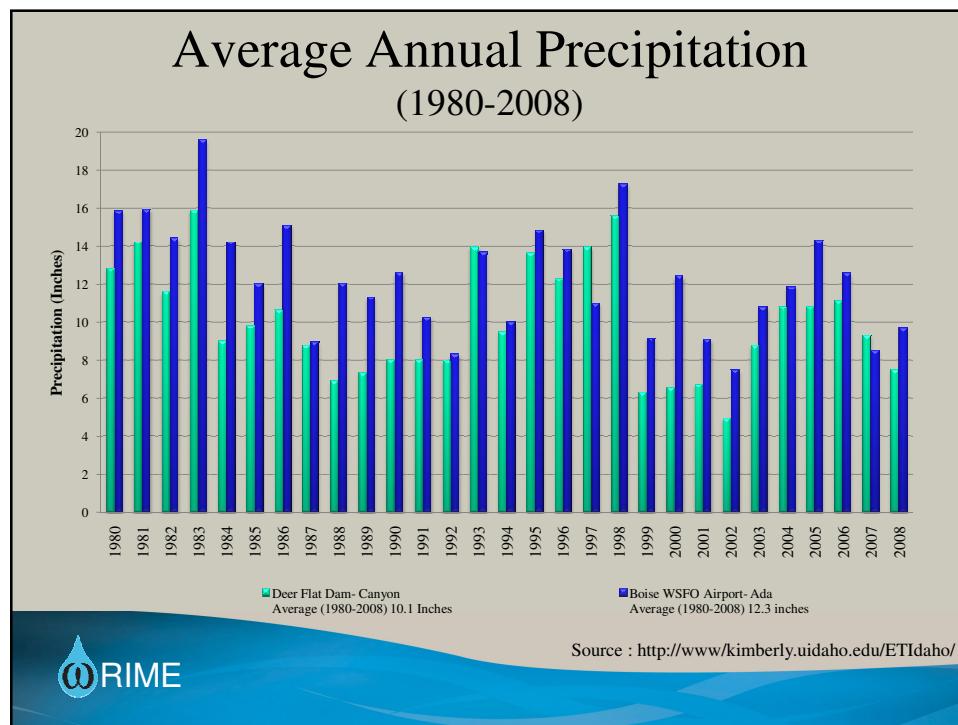
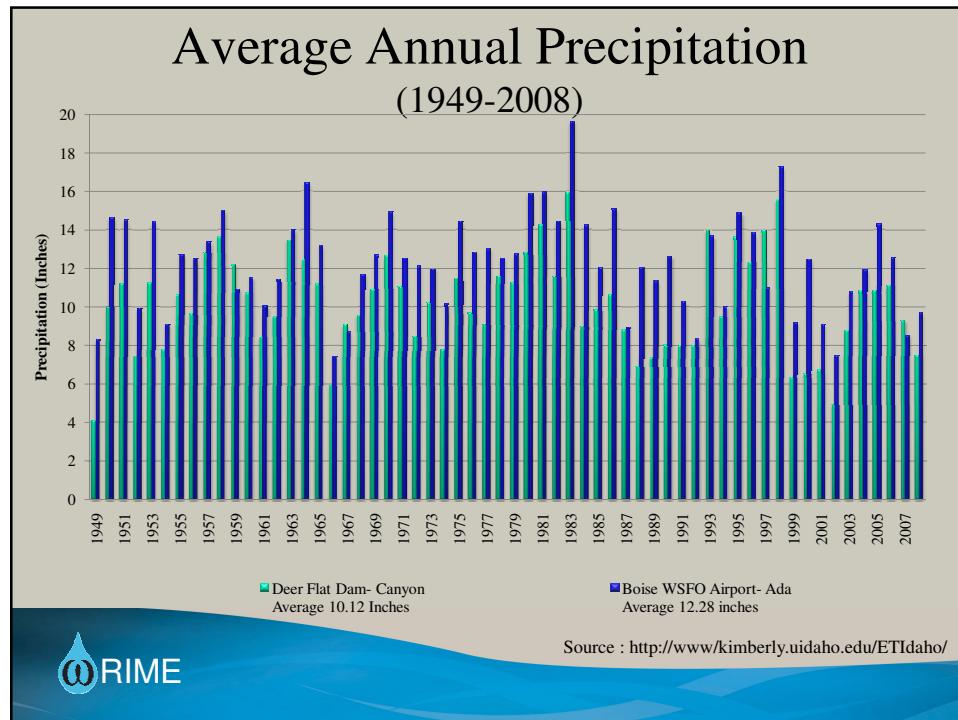


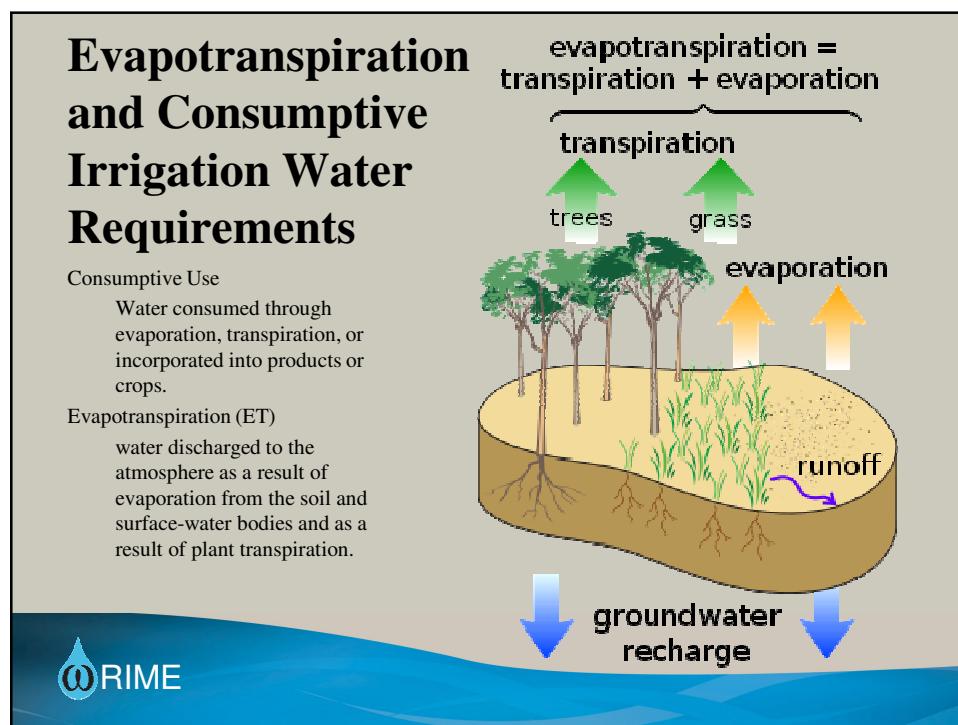
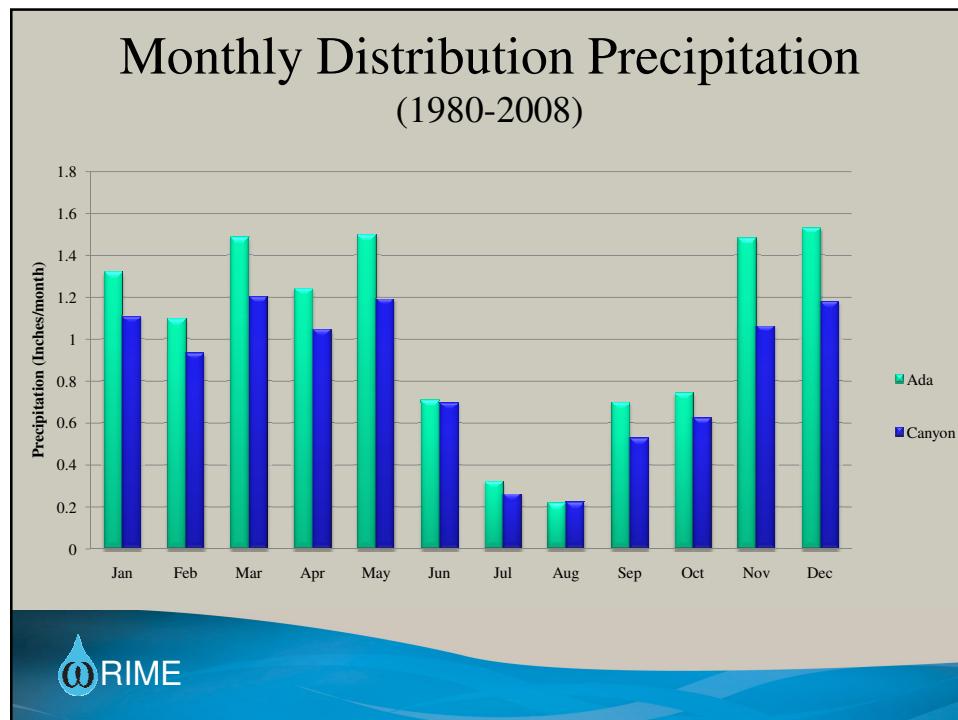
■ Native  
■ Urban  
■ Rural  
■ Water  
■ Semi Agricultural  
■ Agricultural  
■ Idle  
■ Riparian  
■ Urban Landscape

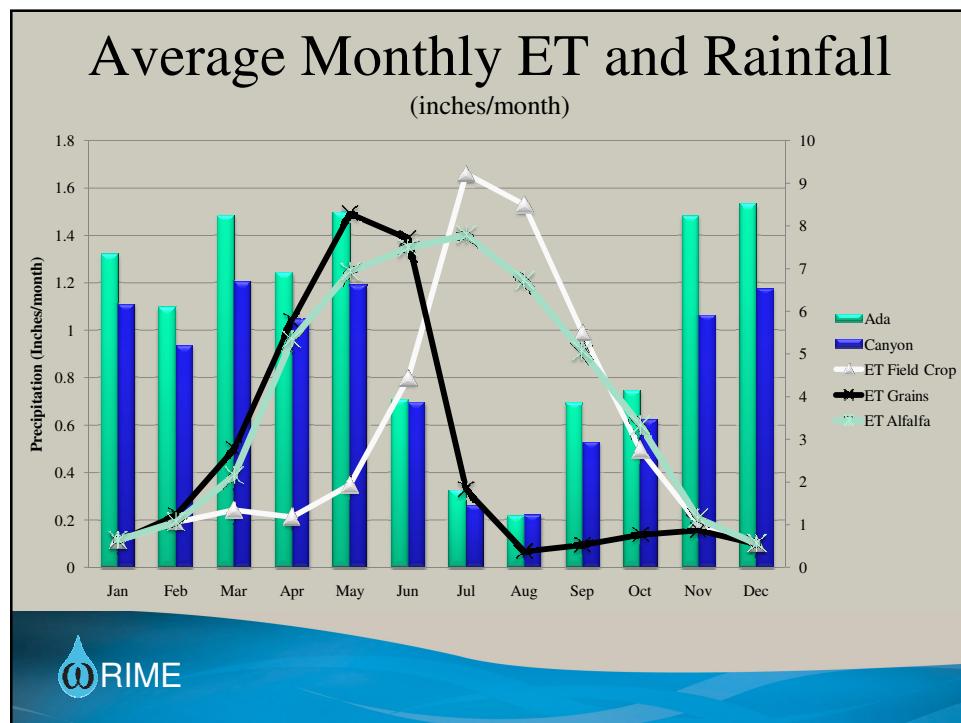
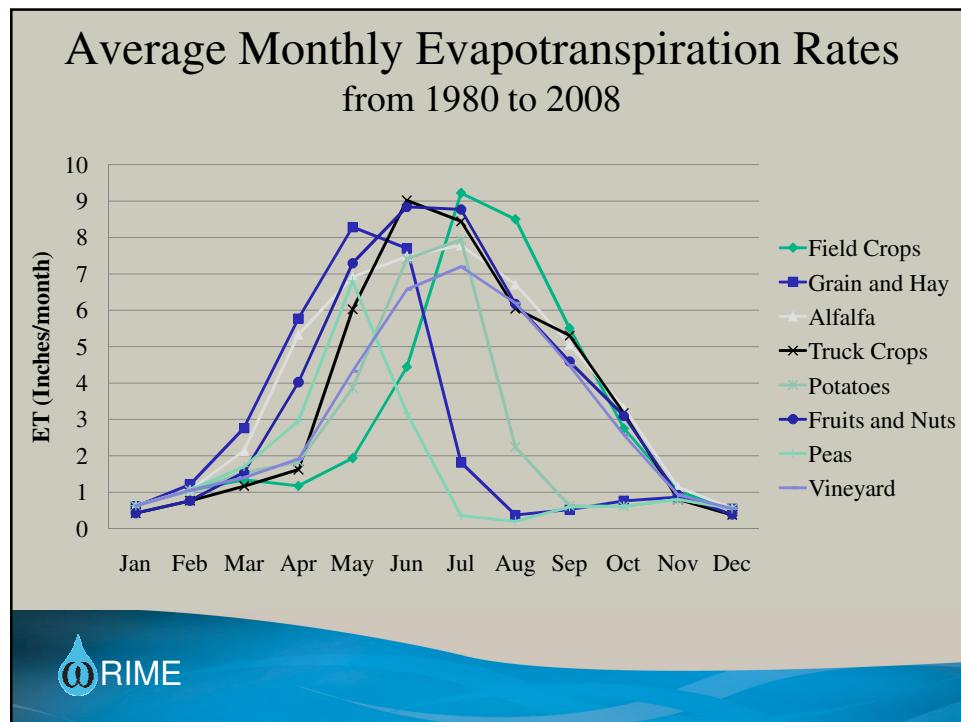












## Crop Distribution

Two sources of Data:

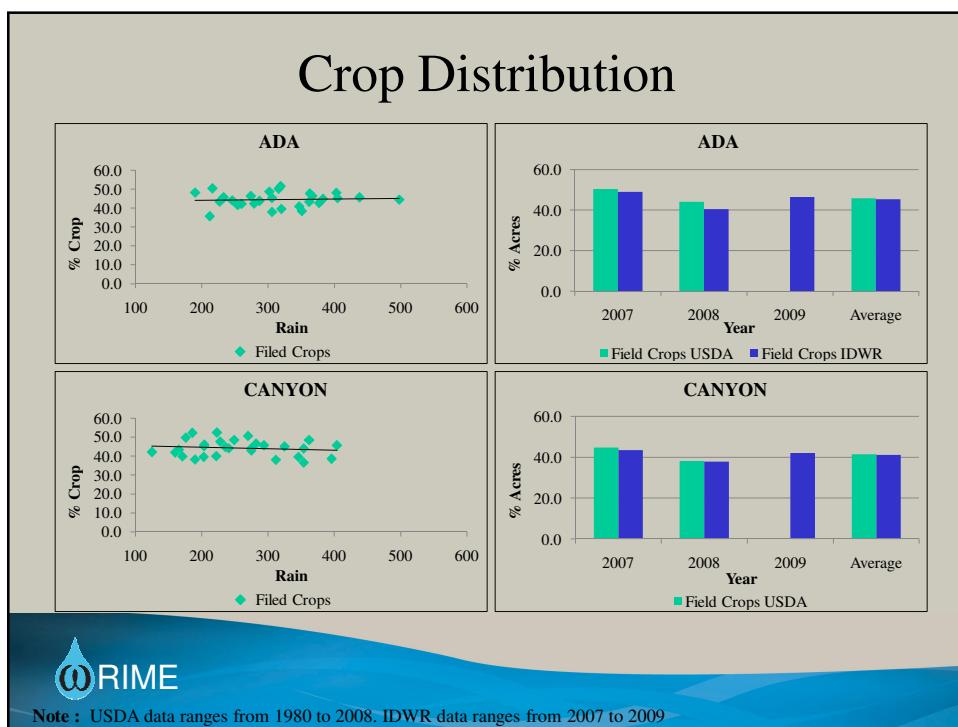
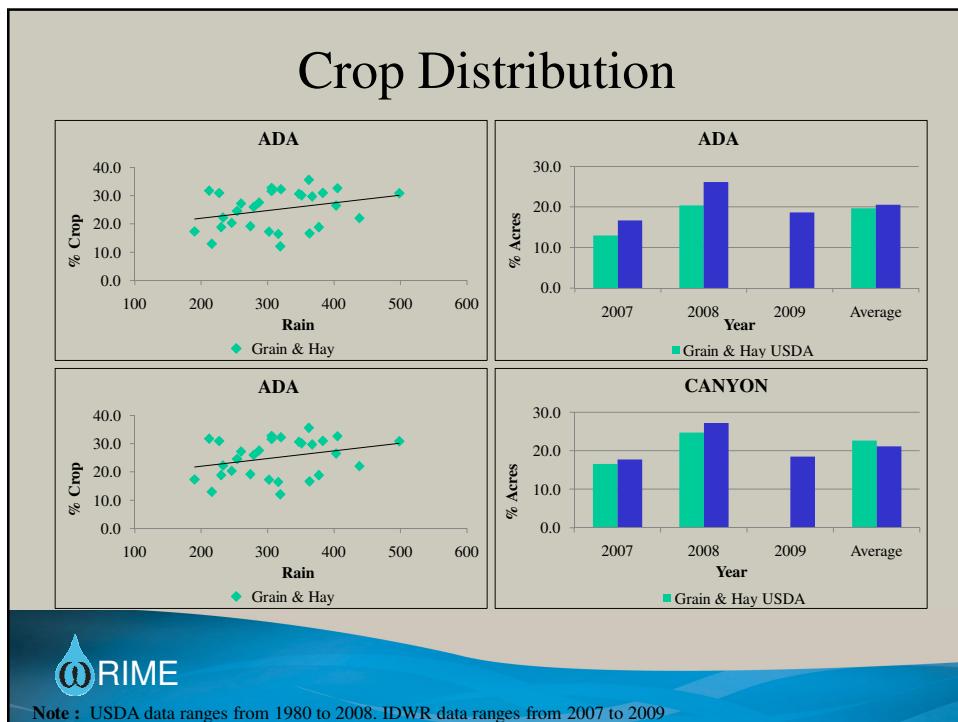
- 1) IDWR ID Acres Report for 07,08, and 09
- 2) USDA National Agricultural Statistics Service : Countywide Annual Crop Acreage Statistics

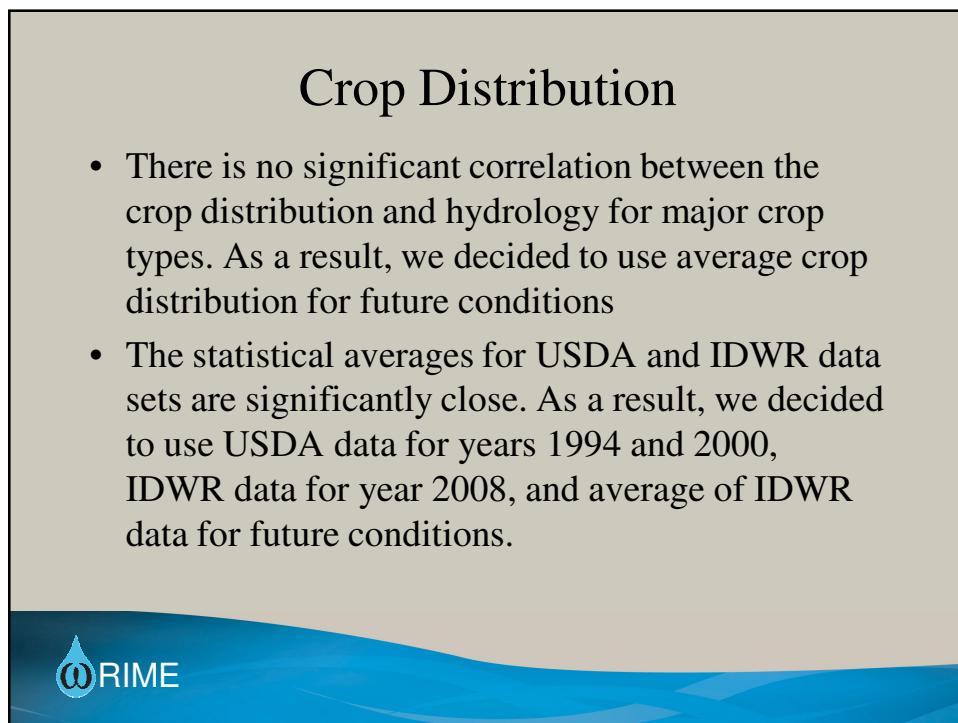
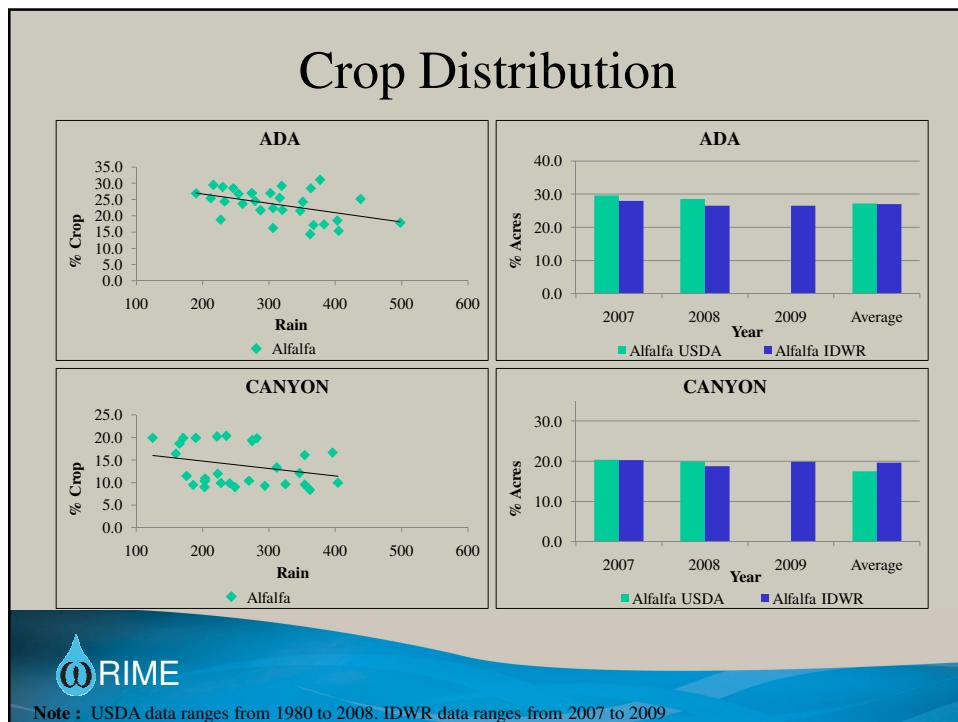


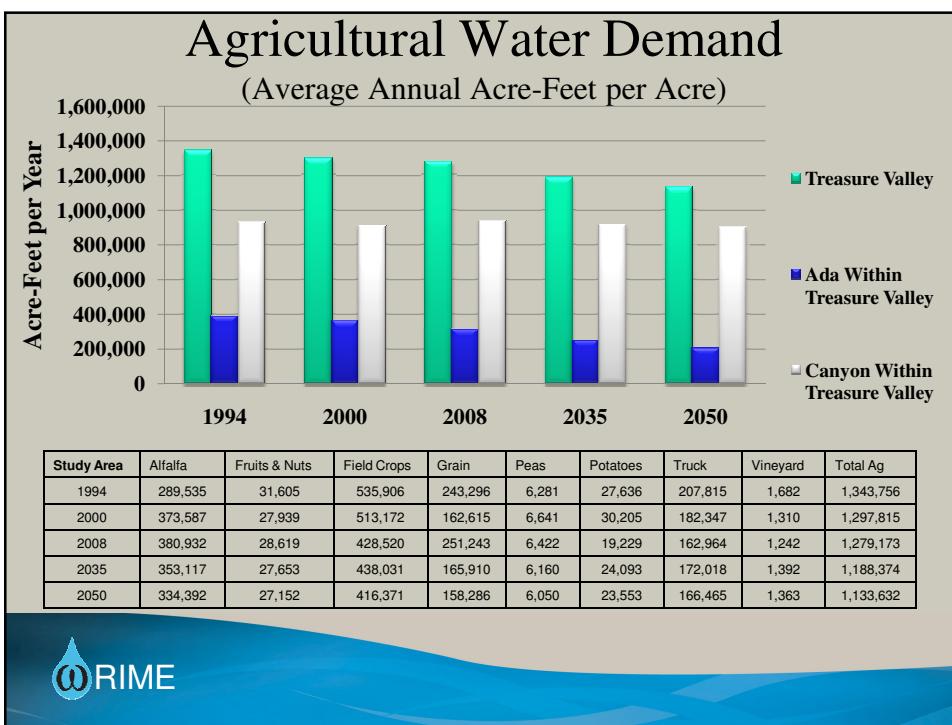
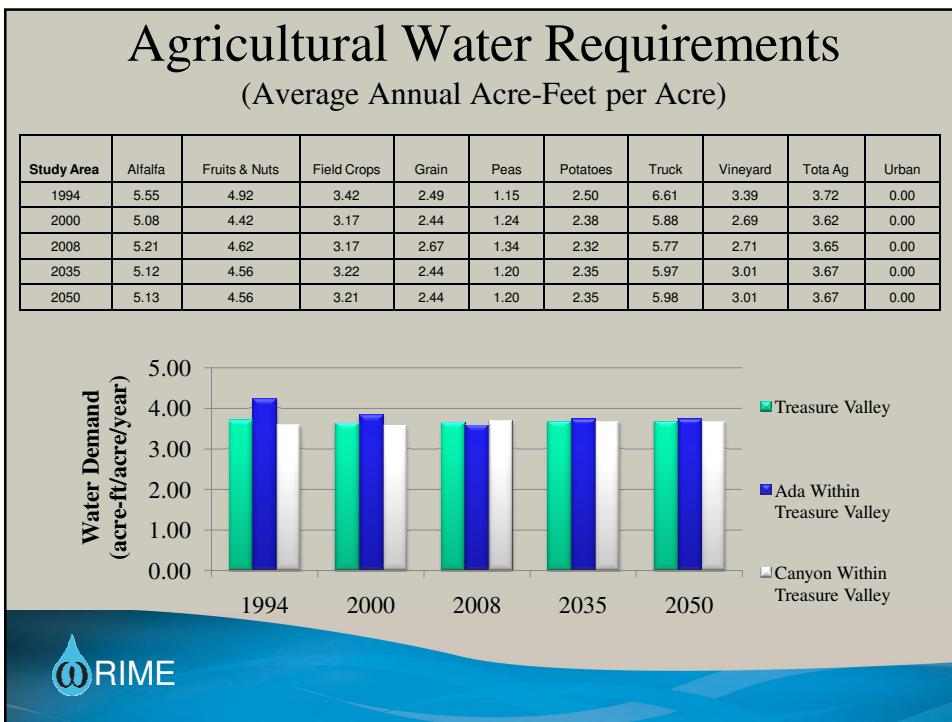
## Crop Type Selection

Classification	Crop Type		Average Annual ET (mm/year)
<b>Grain &amp; Hay Crops</b>	Wheat	Sorgh	
	Barley	Hops	764
	Oats		
<b>Filed Crops</b>	Sugarbeets	Sun Flower	
	Corn	Pasture	934
	Beans	Misc. Field	
<b>Alfalfa &amp; Alfalfa Mixtures</b>			1226
<b>Truck, Nursery &amp; Berry Crops</b>	Onion	Asparagus	Radish
	Carrot	Misc. Greens	Turnip
	Pumpkin	Herbs	Peas *
	Strawberries	Peppers	Potatos *
<b>Deciduous Fruits &amp; Nuts</b>	Peach	Nectarine	
	Apple	Apricots	
	Prune	Misc.	1192
	Pears	Deciduous	
<b>Vineyards</b>			967









## Summary

- DCMI Econometric method and population projection method estimates are approximately 2% difference
- Urban demand ranges from 163,000 to 203,000 Million Gallons in 2060 (500 TAF to 614 TAF)
- Agricultural demand drops from 1,300 TAF to 1,100 TAF
- Total 2060 Demand Ranges from 1,600 TAF to 1,714 TAF
- Data Needs:
  - City of Nampa water production/use data
  - Detailed water use and termination (connections) data from 1999 to 2009



## Discussion Points

- Is it adequate to use population projections instead of complex DCMI econometric method for the purposes of planning
- Comprehensive DCMI method requires more extensive data which is difficult to obtain
- Is it adequate to use population method estimate as a high scenario estimate and assume % conservation to create middle and low scenario estimates
- Agricultural demand assumption is estimated with a reduction in farm land to urban. Should we keep agricultural acreage constant?

